XIX. *Meteorological Observations made on Board Her Majesty's (hired) Bark Pagoda, from January 10 to June 20, 1845, between −20° and −68° Latitude, and 0° and 120° East Longitude. By Lieut.* HENRY CLERK, *Royal Artillery. Communicated by Lieut.-Colonel* SABINE, *R.A., For. Sec. R.S., &c.*

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As much interest has been taken of late in the state of the barometer in high southern latitudes, the Expedition sent last year from the Cape of Good Hope to complete the magnetical observations made by Sir JAMES C. Ross in those latitudes, was supplied with a barometer and other meteorological instruments, and directed to make meteorological as well as magnetical observations. I have now the honour of laying before the Royal Society the observations made during that Expedition. They were taken daily at the hours of 3 and 9 A.M., 3 and 9 P.M., noon, and midnight, by the officers of the ship during their respective watches. Nothing could exceed the zeal with which the officers entered into all the objects of the Expedition, and the attention and care they took in the observations they had to make.

The following are the instruments with which the Expedition was furnished:—

One marine barometer,
Three thermometers,
One DANIELL's hygrometer,
} by J. NEWMAN, London.
Ether in metal bottles.

The barometer was of the usual construction, the case being of wood and the scale of ivory, read off by a vernier to ·01 of an inch; the mercury was contained in a leathern bag. It was compared with the standard barometer at the Magnetic Observatory, Cape of Good Hope, both before and after the Expedition; and also with the Royal Society's barometer on its return to England. The following are the comparisons:—

Cape of Good Hope.—January 1845.

Standard		Marine		Marine below standard.
Barometer.	Thermometer.	Barometer.	Thermometer.	
inches.	°	inches.	°	inch.
29·863	67·9	29·753	67·3	
29·896	68·1	29·785	67·5	
29·949	69·4	29·834	69·1	·115
30·001	70·4	29·884	70·4	
30·067	69·0	29·948	68·5	
30·090	69·4	29·975	68·8	

Cape of Good Hope.—June 1845.

Standard		Marine		Marine below standard.
Barometer.	Thermometer.	Barometer.	Thermometer.	
inches.	°	inches.	°	inch.
30·302	55·7	30·125	55·7	
30·195	58·9	30·000	58·6	
30·096	59·3	29·933	59·1	·168
30·515	52·4	30·370	52·7	
30·097	54·2	29·935	54·3	
30·394	53·8	30·225	53·9	

At the Royal Society's Rooms, London.—March 1846.

Standard		Marine		Marine below standard.
Barometer.	Thermometer.	Barometer.	Thermometer.	
inches.	°	inches.		inch.
29·548	42·5	29·390	42·5	·149
29·430		29·280		
29·588		29·450		

From these comparisons it would appear that a change of ·05 may have taken place in the barometer during the Expedition: as the time is not known when the change took place, the mean of the three comparisons, viz. +·144 has been applied to all the observations. They have also been corrected for the effect of temperature on the mercurial column, the corrections being taken from the Table given in the Royal Society's Instructions for Magnetical and Meteorological Observatories, p. 82. The daily means thus corrected are given in the Abstract in Table I.

Table II. contains the means of every seven successive days; these means have had an additional correction applied to them, for the variation in the length of the column of mercury occasioned by the variation of gravity in different latitudes.

	inch.
The correction in lat. −20° amounts to	−0·059
The correction in lat. −45 amounts to	−0·000
The correction in lat. −70 amounts to	+0·059

and proportionally for intermediate latitudes.

Table III. contains the general results arranged according to latitude. This has been done by grouping together, without reference to date, the weekly means belonging to nearly similar latitudes. The number of observations, of which each general result is the mean, is given in the last column of the Table.

In order to resolve the heights of the barometer into the two constituents of aqueous and gaseous pressure, one of Daniell's hygrometers was observed at the hours of 9 A.M. and 3 P.M., by Assistant-Surgeon W. Dixon, M.D., attached to the Expedition. The tension of vapour obtained by these observations is taken from the Table in the Royal Society's Instructions (page 89). This being deducted from the height of the barometer in Tables II. and III., leaves the pressure of the dry air.

The thermometers, employed for observing the temperature of the air and of the surface of the sea, were frequently tested by immersing them in melting snow, and the necessary corrections have been applied. The thermometers were found to have very little index error. The temperature of the surface of the sea was obtained by drawing up water in a small canvas bucket and immersing a thermometer immediately into it.

The directions of the wind are the true ones, *i. e.* the observed compass direction corrected for the declination. The force of the wind and the state of weather were recorded according to the system drawn up by Captain BEAUFORT for the use of the Royal Navy:—frequent attempts were made to observe the force of the wind by means of one of LIND's gauges, but owing to the rolling motion of the ship it was found impossible.

The observations in the Pagoda show a lower barometer within the Tropics than a little beyond them; the mercury rising from latitude −20° to about −35°, where it stood at 30·15.

From latitude −35° to −56° the barometer fell rapidly, the difference being 1·054 inch. The descent of the mercury with the increase of latitude did not appear to extend beyond −56°, as in the forty days during which the Pagoda was between −60° and −67°·5, the mean height of the barometer scarcely differed from the mean corresponding to −56° 21′.

The gaseous pressure presents similar features, rising from −20° to −35°, thence descending to −56°, and remaining nearly constant from −56° to −67°. The difference between lat. −35° and lat. −56° amounts in this case to 0·78 inch.

No influence of longitude on the barometer is deducible from these observations, extending from 0° to 120° East.

For the purpose of comparing these results with the inferences which have been derived from previous observations, I have added an abstract of the conclusions drawn from the observations discussed in Dr. ADOLPH ERMAN's work*, which has been communicated to me by Lieut.-Colonel SABINE.

"From a parallel very near the equator, the pressure of the atmosphere, measured by the barometer corrected for gravity, increases both northward and southward to a little beyond the outer limit of the trade winds; beyond this limit the pressure decreases, at first slowly, but much more rapidly after passing the 50th parallel. The maximum of pressure occurs at about 35° in each hemisphere. The decrease from the maximum in the direction of the Pole has been found in the southern hemisphere to continue as far as the parallel of Cape Horn (−55°·5), where the low pressure corresponds with that observed in the northern hemisphere at Kamtchatka and Sitka, which are nearly in the same latitude.

"The dry air has also a minimum zone within the inner limits of the trades; the increase from thence in both directions is more rapid and considerable than that of the pressure of the gaseous and aqueous atmospheres united, and the gaseous maximum in both hemispheres is obtained in a higher latitude (about 45°). The pressure

* Ueber Meteorologische Beobachtungen bei einer Seereise um die Erde.

of the dry air at its maximum at 45° exceeds the equatorial gaseous pressure by about 0·47 inch; the pressure of the whole atmosphere at its maximum in 35° is not more than 0·18 above the equatorial pressure.

"The following Table contains the approximate mean annual pressures of the atmosphere corresponding to different latitudes, as given by Dr. ERMAN:—1. Of the barometer; 2, of the vapour; and 3, of the dry air. The Table is formed from observations in both hemispheres, and in both the Pacific and Atlantic Oceans; it also unites observations made in different seasons, with a single exception.

Latitude.	Barometer.	Tension of the vapour.	Pressure of the dry air.	Remarks.
	inches.	in.	in.	
° 0	29·98	0·77	29·21	
5	30·00	0·77	29·23	
10	30·03	0·75	29·28	
15	30·07	0·70	29·37	
20	30·11	0·65	29·46	
25	30·14	0·61	29·53	
30	30·15	0·55	29·60	
35	30·16	0·50	29·66	
40	30·12	0·44	29·68	
45	30·03	0·35	29·68	
50	29·90	0·26	29·64	Winter only.
55	29·64	0·22	29·42	

"The summer pressures of the dry air are less than the winter ones, except at the equator; the contrary is the case with the vapour."

On comparing Dr. ERMAN's conclusions with those drawn from the observations in the Pagoda, it appears that they agree in placing the maximum barometric pressure in lat. 35°, the pressure diminishing thence rapidly to 56°, where the Pagoda's observations show it to become nearly stationary; but they differ as to the place of the maximum pressure of the dry air, that being in lat. 40° or 45° by Dr. ERMAN's observations, and in lat. 35° by those of the Pagoda. It is possible however that a longer series of observations would have made the present ones agree more closely in this respect also with those of Dr. ERMAN, his means being taken from observations made in different seasons, and in various longitudes in both hemispheres. Taking rom Dr. ERMAN's table 29·21 as the mean pressure of the dry air at the equator, the observations in the Pagoda show a difference of *gaseous* pressure between the equator and the high latitudes (−56° to− 67°·5) of the southern hemisphere amounting to 0·28 inch; the observations in the Pagoda were however exclusively in the summer months, when the pressures are generally less than on the mean of the whole year. Owing to the increase in the elastic force of the aqueous vapour in the warmer regions of the globe, the difference of *barometric* pressure between the equator and the high latitudes (taking the data from Dr. ERMAN's table on the one hand, and from the observations in the Pagoda on the other) amounts to 0·89 inch.

As the facts shown by these observations are curious, and must be interesting to meteorologists, it is hoped that the Royal Society will not consider this paper unworthy of their acceptance.

TABLE I.—Daily Abstract of Meteorological Observations made on board Her Majesty's (hired) Bark "Pagoda," from the 10th of January to the 20th of June 1845, between −20° and −68° latitude and 0° and 120° east longitude.

Date.	Position.		Corrected barom.	Temperature.		Hygrometer.		Wind.		Remarks.
	Lat.	Long.		Air.	Sea.	Dew-point.	Elasticity of vapour.	Direction.	Force.	
1845.	° ′	° ′	inch.	°	°	°	inch.			
Jan. 10.	−34 46	17 46	30·216	65	66	59	·497	S. by E.	4	Passing clouds.
11.	−35 29	15 09	30·154	66	66	57	·462	S. by W.	2	Passing clouds.
12.	−35 17	14 00	30·173	65	67	62	·556	S. by W.	2	Passing clouds.
13.	−35 18	13 25	30·153	66	67	61	·527	W. by N.	2	Cloudy.
14.	−37 29	13 24	30·104	60	62	51	·381	S.W. by W.	4	Cloudy and misty.
15.	−38 37	14 29	30·240	56	57	50	·359	S.W. by S.	3	Overcast and squally; strong breezes.
16.	−39 07	14 40	30·203	59	60	52	·392	W. by N.	1	Passing clouds.
17.	−40 34	14 23	29·967	60	60	54	·424	W. by S.	4	Passing clouds and misty.
18.	−43 00	13 00	29·693	56	57	47	·336	W. by N.	7	Overcast; threatening and squally.
19.	−44 58	13 19	29·714	43	44	36	·220	W.	7	Overcast and squally; passing showers.
20.	−46 34	13 33	29·362	41	42	35	·208	W.N.W.	7	Overcast; squally; heavy rain.
21.	−47 45	12 25	29·728	39	40	31	·178	E.S.E.	3	Overcast; squally; passing snow.
22.	−48 45	10 47	29·381	40	41	38	·236	N.N.W.	4	Overcast; squally.
23.	−50 40	10 23	29·299	39	39	37	·227	W.	3	Overcast and misty; drizzling rain.
24.	−51 47	9 34	29·258	38	37	36	·214	W.N.W.	1	Cloudy and snow.
25.	−53 06	7 49	29·309	36	35	29	·163	W.S.W.	4	Overcast; squally and snow; icebergs and stream-ice.
26.	−53 55	6 06	29·590	35	35	28	·159	S.S.E.	3	Cloudy; numerous icebergs.
27.	−53 13	5 57	29·743	34	34	29	·163	S.W. by W.	4	Cloudy; numerous icebergs.
28.	−57 33	4 08	29·164	33	34	Not observed.		N.N.W.	8	Overcast; squally and snow.
29.	−59 02	4 19	28·928	33	32	28	·159	Westerly.	8	Cloudy; passing snow; numerous icebergs.
30.	−60 43	4 00	28·770	32	32	29	·162	W.S.W.	6	Overcast and squally; pack ice southward to south-west.
31.	−61 10	9 07	28·769	34	33	31	·182	S.-westerly.	5	Overcast and snow; misty.
Feb. 1.	−62 02	12 49	28·575	34	33	33	·193	Southerly.	7	Cloudy; squally and passing snow.
2.	−61 54	16 27	28·953	34	34	34	·199	Southerly.	6	Cloudy and squally; no ice in sight.
3.	−61 50	19 14	29·281	34	34	32	·186	Southerly.	2	Passing clouds.
4.	−62 00	20 36	29·231	33	34	31	·177	N.E. by E.	3	Overcast; passing snow.
5.	−63 19	21 15	29·294	32	33	31	·181	E. by N.	1	Overcast; broken ice in streams.
6.	−64 25	24 10	29·375	33	33	30	·172	N.E. by N.	3	Passing clouds; very clear.
7.	−65 39	28 40	29·583	33	33	29	·162	N. by E.	4	Passing clouds; very clear.
8.	−66 25	30 45	29·711	29	30	25	·144	S.S.E.	2	Passing clouds; misty.
9.	−66 36	36 50	29·271	28	29	25	·141	N.W. by W.	4	Passing clouds.
10.	−67 03	38 51	29·271	31	31	24	·136	E. by N.	2	Cloudy; no ice in sight.
11.	−67 38	39 41	29·173	30	30	24	·139	Easterly.	1	Passing clouds and snow; pack ice in sight.
12.	−66 40	39 24	29·221	29	30	23	·134	E. by S.	2	Overcast; passing snow.
13.	−67 25	40 14	28·912	31	31	23	·133	N.E. by E.	6	Cloudy and snow squalls.
14.	−66 25	40 01	28·694	32	32	28	·159	E. by N.	9	Cloudy and snow squalls; strong gale.
15.	−65 38	38 52	28·682	32	32	29	·163	E. by N.	10	Cloudy and snow squalls; strong gale.
16.	−64 52	38 37	28·761	34	33	30	·172	E. by N.	4	Cloudy and fog.
17.	−64 52	40 12	28·937	34	34	30	·172	N. ½ E.	2	Cloudy; snow.
18.	−64 22	40 29	28·674	33	33	27	·153	N.E. ½ E.	9 to 11	Overcast; heavy gale; incessant snow.
19.	−64 00	41 00	28·606	33	34	29	·168	N.W. by N.	4	Overcast.
20.	−63 19	45 45	29·104	33	33	28	·159	N. by W. ½ W.	5	Passing clouds and misty.
21.	−63 36	46 48	28·814	33	33	26	·146	N. by E.	0	Passing clouds and snow.
22.	−63 43	49 29	28·707	32	32	29	·163	N.E. by N.	6	Overcast; snow squalls.
23.	−63 42	50 19	28·550	32	32	Not observed.		N.E. by N.	6	Overcast; snow squalls.
24.	−62 36	51 15	28·519	32	32	29	·163	S.S.E.	6	Overcast; snow and sleet.
25.	−61 30	53 43	29·069	32	31	23	·134	S.S.E.	3	Passing clouds; very clear.
26.	−61 19	57 33	29·390	33	33	29	·165	Westerly.	4	Passing clouds and snow; very clear.
27.	−61 48	64 14	29·538	33	32	29	·163	Southerly.	6	Passing clouds; very clear.
28.	−61 43	71 13	29·598	34	32	31	·182	S.S.W.	4	Passing clouds; aurora seen.
Mar. 1.	−62 10	72 25	29·590	36	33	31	·179	S.-westerly.	1	Overcast; very clear.
2.	−62 44	76 11	29·501	36	33	26	·146	N.-easterly.	3	Cloudy; very clear.
3.	−64 15	79 44	29·007	31	32	28	·159	E. by N.	5	Overcast.
4.	−63 02	80 27	28·535	33	32	Not observed.		S.E.	7	Overcast; passing snow.
5.	−61 41	84 57	28·714	32	31	28	·160	S.S.W.	5	Passing clouds; brilliant aurora.
6.	−60 48	88 23	28·821	33	32	26	·146	W.S.W.	4	Cloudy; snow and fog.
7.	−61 23	91 13	28·755	34	33	28	·159	N.N.E.	3	Passing clouds; very brilliant aurora.
8.	−61 10	92 07	28·720	34	33	29	·165	S.-easterly.	3	Blue sky; very clear; numerous icebergs.
9.	−60 32	92 27	28·849	36	34	27	·156	S.-easterly.	3	Cloudy and snow; aurora visible.
10.	−60 03	95 36	29·048	33	32	24	·135	Southerly.	4	Cloudy; aurora seen.
11.	−59 49	99 45	29·024	32	32	28	·159	Variable.	4	Cloudy; passing snow.
12.	−58 31	98 59	28·512	33	32	28	·159	E.N.E.	7	Overcast; snow squalls.
13.	−57 53	99 08	28·729	35	33	26	·145	S. by W.	6	Overcast; snow squalls.
14.	−56 50	101 28	29·184	36	34	32	·186	W. ½ N.	5	Passing clouds; occasional snow.
15.	−55 45	103 12	29·059	36	34	33	·196	W. ½ N.	5	Overcast and snow squalls; aurora.
16.	−54 42	106 08	28·877	36	35	34	·200	W. ½ S.	6	Overcast; heavy squalls of snow.

Table I. (Continued.)

Date.	Position. Lat.	Position. Long.	Corrected barom.	Temperature. Air.	Temperature. Sea.	Hygrometer. Dew-point.	Hygrometer. Elasticity of vapour.	Wind. Direction.	Wind. Force.	Remarks.
1845.			inch.	°	°	°	inch.			
March 17.	−54° 15′	108° 09′	28·627	37	37	Not observed.		N.N.W.	6	Cloudy; passing snow squalls.
18.	−53 08	110 29	28·867	39	37	35	·212	S.W. by W.	4	Passing clouds; aurora seen faintly.
19.	−51 10	111 23	29·357	40	38	36	·220	W. ½ S.	7	Cloudy; passing squalls; aurora seen faintly.
20.	−49 01	112 51	30·049	44	42	39	·242	W. ½ N.	4	Cloudy; aurora seen.
21.	−48 06	114 34	29·882	48	47	Not observed.		N.W. by N.	6	Overcast; misty; heavy rain squalls.
22.	−47 21	115 15	29·671	47	46	42	·270	N. by W. ½ W.	2	Overcast; misty and fog.
23.	−47 03	115 58	29·394	45	44	38	·237	W. by S.	9	Overcast; passing showers; squally.
24.	−45 12	116 47	29·686	51	49	45	·302	W. by N.	7	Overcast and squally.
25.	−43 28	116 52	29·996	51	49	44	·296	W.	3	Passing clouds; very clear.
26.	−41 08	116 42	30·001	53	52	45	·302	W. ¾ S.	5	Passing clouds.
27.	−38 42	116 15	30·213	54	52	47	·330	S.W. by S.	3	Passing clouds; very clear.
28.	−37 03	116 57	30·314	58	58	56	·447	W.S.W.	1	Overcast; wind variable.
29.	−36 11	116 50	30·272	61	63	59	·497	Variable.	1	Overcast; heavy rain.
30.	−35 14	117 37	30·121	66	65	56	·449	E. by N.	4	Passing clouds; very clear.
31.	−35 28	117 04	30·130	64	63	57	·455	E. by S.	3	Passing clouds.
April 1.	−35 03	117 56	30·140	65	65	58	·471	E.S.E.	4	Passing clouds; very clear.
2.			30·184	64	65	58	·471	S.E. ½ E.	3	Overcast; passing showers.
3.			30·181	65	64	52	·389	E.N.E.	2	Passing clouds.
4.			30·149	66	64	57	·455	N.E. ½ E.	3	Passing clouds.
5.			30·073	69	64	58	·480	E. by S.	2	Passing clouds.
6.			29·920	71	66	59	·497	N.W. ½ W.	2	Blue sky and detached clouds.
7.			29·998	63	64	52	·396	W.S.W.	4	Passing clouds and squally.
8.			30·191	63	62	57	·463	W.S.W.	4	Passing clouds.
9.			30·295	64	65	54	·424	E. by S.	2	Passing clouds; very clear.
10.			30·255	65	64	49	·356	N.E.	2	Passing clouds.
11.			30·146	70	64	47	·324	E. by N.	3	Passing clouds; very clear.
12.			29·961	67	64	61	·535	S.W. by W.	2	Passing clouds.
13.			30·056	65	64	55	·443	N.W.	2	Passing clouds.
14.			30·161	68	65	58	·488	S.S.E.	1	Passing clouds; fine weather.
15.			30·001	67	66	57	·472	W. ½ S.	2	Passing clouds.
16.			29·818	64	64	60	·514	W.N.W.	5	Cloudy; strong breezes and squally.
17.			29·879	62	61	Not observed.		W.S.W.	6	Cloudy; squally and heavy rain.
18.			30·159	58	61	49	·348	S.W.	5	Cloudy and squally.
19.			30·330	57	60	54	·429	W.S.W.	3	Passing clouds and squalls.
20.			30·322	63	61	57	·471	S.E. ½ E.	0	Passing clouds.
21.			30·166	67	66	55	·440	E.N.E.	3	Passing clouds.
22.	−35 42	115 55	29·980	70	65	63	·570	N.-westerly.	0	Light, variable airs, and fine.
23.	−35 34	114 39	29·997	62	63	50	·362	W.N.W.	3	Cloudy and rain; variable wind.
24.	−34 12	113 05	30·229	63	63	50	·370	S.S.W.	3	Passing clouds and showers.
25.	−32 28	111 32	30·307	65	64	54	·417	E.S.E.	3	Passing clouds; wind variable.
26.	−30 26	109 06	30·130	69	65	64	·600	Easterly.	5	Passing clouds.
27.	−29 16	106 49	29·985	70	68	63	·580	Northerly.	5	Passing clouds; wind variable.
28.	−27 41	106 34	29·945	69	67	59	·506	W.N.W.	5	Overcast; passing squalls.
29.	−25 52	105 02	30·068	68	67	58	·480	S.S.W.	6	Passing clouds; strong breezes and squally.
30.	−24 04	102 24	30·150	68	68	57	·463	Southerly.	5	Cloudy and squally; wind variable.
May 1.	−23 58	99 13	30·178	68	70	55	·440	S. ½ E.	2	Cloudy; occasional squalls and rain.
2.	−24 01	92 27	30·057	69	68	58	·480	Easterly.	1	Overcast; drizzling rain; wind variable.
3.	−23 55	95 58	29·997	72	69	63	·580	N.E.	3	Passing clouds.
4.	−24 17	93 55	29·905	74	71	68	·676	Northerly.	3	Cloudy; passing squalls and rain; wind variable.
5.	−24 28	92 07	29·897	73	71	69	·698	Westerly.	5	Overcast; strong breezes and squally.
6.	−22 45	90 38	30·028	72	69	56	·448	S.S.W.	2	Overcast; very clear.
7.	−21 46	89 40	30·100	73	71	58	·488	S.S.E.	2	Passing clouds; very clear.
8.	−20 38	87 56	30·132	75	72	63	·580	E. by S.	4	Passing clouds; light breezes, and fine.
9.	−20 37	85 19	30·116	74	73	65	·622	E. by S.	4	Cloudy; occasional rain.
10.	−20 25	82 10	30·095	74	74	66	·632	E.S.E.	5	Overcast and squally.
11.	−20 36	79 13	30·051	76	73	64	·590	E.S.E.	3	Passing clouds; fresh breezes, and fine.
12.	−20 44	78 31	29·997	77	72	62	·560	S.-easterly.	2	Passing clouds; very clear.
13.	−20 39	77 43	29·940	76	74	65	·622	S.S.E.	1	Passing clouds; light airs, and fine.
14.	−20 28	76 13	29·932	75	73	67	·655	E.S.E.	4	Overcast; very clear; strong breezes.
15.	−20 34	73 17	29·904	75	72	72	·773	Easterly.	6	Overcast; heavy rain.
16.	−20 27	70 39	29·832	75	74	74	·826	Easterly.	3	Cloudy; heavy rain and lightning.
17.	−20 34	69 25	29·762	78	77	73	·801	Variable.	1	Overcast; heavy rain.
18.	−21 08	68 08	29·812	77	76	68	·676	W.N.W.	2	Cloudy; light variable airs.
19.	−21 11	67 54	29·885	76	74	67	·664	W.S.W.	2	Passing clouds.
20.	−21 12	67 29	29·967	75	74	66	·643	S.W. by S.	1	Passing clouds.
21.	−21 01	65 56	30·011	75	73	63	·570	Southerly.	3	Passing clouds; very clear.
22.	−20 41	63 00	30·104	75	72	58	·489	S. by E. ½ E.	3	Passing clouds.
23.	−20 30	59 32	30·184	75	73	61	·535	S.S.E.	6	Cloudy; squally, with rain.
24.	−20 09	57 31	30·204	75	74	66	·632	E. by S.	5	Overcast; squally and misty.

At anchor in Princess Royal Harbour, King George's Sound, West Australia.

Table I. (Continued).

Date.	Position. Lat.	Position. Long.	Corrected barom.	Temperature. Air.	Temperature. Sea.	Hygrometer. Dew-point.	Hygrometer. Elasticity of vapour.	Wind. Direction.	Wind. Force.	Remarks.
1845.	° ′	° ′	inch.	°	°	°	inch.			
May 25.	At anchor, Port Louis, Mauritius.		30·204	74	73	63	·570	E. by S.	4	Passing clouds and squalls.
26.			30·190	77	72	63	·570	S.E. by E.	3	Passing clouds.
27.			30·169	76	72	59	·505	S.E. by E.	3	Cloudy; squally and rain.
28.			30·165	77	74	64	·591	S.E. by E.	3	Passing clouds.
29.	−20	50 55 32	30·160	78	74	62	·561	Easterly.	3	Passing clouds and haze.
30.	−21	50 53 30	30·144	77	74	64	·590	N.-easterly.	5	Passing clouds.
31.	−23	32 51 59	30·107	78	76	67	·665	Easterly.	3	Passing clouds; moderate breezes and fine.
June 1.	−25	59 49 28	29·949	75	74	70	·723	Northerly.	7	Cloudy; heavy squalls and rain.
2.	−26	25 49 11	29·974	73	72	60	·516	S.-westerly.	6	Cloudy; strong breezes and squalls.
3.	−26	23 48 25	30·076	70	70	54	·424	S. by E.	6	Passing clouds; heavy squalls.
4.	−27	14 45 59	30·260	68	70	54	·417	S.-easterly.	4	Passing clouds; very clear.
5.	−28	26 42 48	30·087	69	71	64	·590	Easterly.	5	Overcast; heavy squalls and rain.
6.	−28	46 41 56	30·000	68	70	58	·488	W.S.W.	5	Overcast and squally.
7.	−28	38 40 18	30·201	70	69	58	·488	S.	6	Passing clouds; strong breezes.
8.	−28	58 37 49	30·298	72	70	54	·424	Easterly.	3	Passing clouds; wind variable.
9.	−30	23 35 24	29·986	71	71	66	·632	Northerly.	6	Squally; with heavy rain and lightning.
10.	−31	03 33 56	29·892	68	70	58	·480	W.	8	Cloudy; heavy squalls and rain.
11.	−30	27 33 41	30·093	66	68	54	·417	S.S.W.	3	Cloudy and rain.
12.	−30	35 33 13	30·215	65	67	51	·384	Southerly.	3	Passing clouds and rain.
13.	−31	10 31 28	30·490	65	67	47	·324	S.S.E.	3	Cloudy and squally, with lightning.
14.	−33	03 29 23	30·472	68	69	57	·463	Northerly.	3	Passing clouds.
15.	−34	51 26 46	30·351	71	70	56	·447	Northerly.	3	Passing clouds; hazy.
16.	−35	45 23 28	30·128	70	69	55	·432	N.N.W.	2	Passing clouds; very clear.
17.	−35	40 21 30	30·026	63	66	58	·480	Northerly.	2	Cloudy; light variable airs.
18.	−35	05 20 44	30·149	60	58	56	·455	W.N.W.	1	Passing clouds; in soundings.
19.	−35	08 20 24	30·275	58	58	53	·403	S.W. by W.	1	Overcast.
20.	−34	55 19 27	30·406	58	58	50	·368	S.E.	1	Passing clouds; very clear.

Table II.

Date.	Lat.	Barometer corrected.	Tension of vapour.	Gaseous pressure.	Temperature of air.
1845.	° ′	inches.		inches.	°
January 10 to 16.	−36 35	30·148	·453	29·695	62
17 to 23.	−46 02	29·593	·261	29·332	45
24 to 30.	−55 37	29·280	·170	29·110	34
January 31 to February 6.	−62 40	29·111	·184	28·927	33
February 7 to 13.	−66 47	29·354	·141	29·213	30
14 to 20.	−64 47	28·828	·164	28·664	33
21 to 27.	−62 36	28·985	·156	28·829	32
February 28 to March 6.	−62 20	29·153	·162	28·991	34
March 7 to 13.	−59 54	28·843	·154	28·689	34
14 to 20.	−53 33	29·168	·209	28·959	38
21 to 27.	−44 23	29·834	·289	29·545	50
March 28 to April 3.	−35 41	30·169	·454	29·715	63
April 4 to 10.	−35 03	30·103	·439	29·664	66
11 to 17.	−35 03	29·980	·463	29·517	66
18 to 24.	−35 06	30·136	·427	29·709	63
April 25 to May 1.	−27 41	30·066	·498	29·568	68
May 2 to 8.	−23 07	29·971	·564	29·407	73
9 to 15.	−20 35	29·947	·636	29·311	75
16 to 22.	−20 53	29·852	·667	29·185	76
23 to 29.	−20 18	30·124	·566	29·558	76
May 30 to June 5.	−25 41	30·037	·561	29·476	73
June 6 to 12.	−29 50	30·060	·473	29·587	69
13 to 19.	−34 23	30·242	·429	29·813	65
20.	−34 55	30·378	·368	30·010	58

Table III.

Lat.	Corrected barometer.	Tension of vapour.	Gaseous pressure.	Temperature of air.	Number of observations.
	inches.		inches.		
−20° 35′	29·981	·623	29·358	76°	126
−24 24	30·004	·562	29·442	73	84
−28 45	30·063	·486	29·577	68	84
−35 15	30·151	·433	29·718	63	258
−45 12	29·710	·275	29·435	47	84
−56 21	29·097	·178	28·919	35	126
−62 32	29·083	·167	28·916	33	126
−65 47	29·091	·153	28·938	31	84